

A Few Speed Bumps on the Road to Efficient Utilization of Technology in Education

Joseph B. Bustillos

Comment: Joseph, interesting topic and certainly several strong resources identified. You need to develop a more scholarly writing style . . . I've pointed out specifics below. You also want to be sure you are writing to a clear purpose. At times, your flow of content is also weak. I've pointed out some of your APA errors as well. Overall, this is a B+ paper.

ED 729

Dr. Kay Davis

November 2004

A Few Speed Bumps on the Road to Efficient Utilization of Technology in Education.

I have a Master's Degree in Educational Technology. I've been working in technology since 1979 and am going on my 10th year teaching. Before Spring Break last year I issued a request to my district's IS department for them to load their authorized version of XP and our other applications on the 27 new computers in my computer lab. They didn't get to my request until after the school year ended and then ran into some difficulties installing our software. As of this writing, at the end of November, I'm still waiting for them to resolve their installation problems and because of the way they've configured Windows XP I cannot install any software, even though I have a "local" administrator login. I work in technology fulltime and feel like I'm locked out of solving my own computer lab's needs. If I'm having this much difficulty with my technology how can the classroom teacher, who already has a fulltime job, hope to get a handle on the need to be technologically literate and integrate technology into their teaching. This paper will briefly look at possible hindrances teachers may encounter on the way to efficient utilization of technology in education.

Kay Davis 12/12/04 10:17 PM
Comment: Though you can write with first person; you need to develop the ability to write in a more scholarly style as well . . . I wouldn't

What is Efficient Utilization of Technology in Education?

One error frequently encountered is an apologetic attitude from educators because they don't feel like they're "experts" with all forms of technology. That might be overstating it a bit, but in reading the literature it became clear that it's important to clearly define what one means by the concept of efficient utilization of technology in education. *This paper will explore in depth one key study by Schudelmann . . . in an attempt to describe some of the hindrances . . . In addition, a model for . . .*

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The International Society for Technology in Education (ISTE) has published numerous

resources and guides to assist agencies and educators "improve teaching and learning by advancing the effective use of technology in education" (ISTE, 2004A). One of their premier projects is the National Educational Technology Standards Project (NETS) whose main goal is to help in the creation of national standards for technology use in education. The NETS document for teachers focuses on six areas for performance indicators and standards:

1. Technology Operations and Concepts
2. Planning and Designing Learning Environments and Experiences
3. Teaching, Learning and the Curriculum
4. Assessment and Evaluation
5. Productivity and Professional Practice
6. Social, Ethical, Legal, and Human Issues (ISTE, 2004B) *pdf*

The performance indicators are meant to be general enough so that they can be adapted to fit state, university or district guidelines but at the same time specific enough to cover the topic.

One model that maps the road to efficient utilization of technology in Education is the Wellivers Instructional Transformation Model (Shelly, 2004, p. 6.10) *which is presented below*

in Table X

Table X Wellivers Instructional Transformation Model

1	Familiarization	Teachers become aware of technology and its potential uses
2	Utilization	Teachers use technology, but minor problems will cause teachers to discontinue its use.
3	Integration	Technology becomes essential for the educational process and teachers are constantly thinking of ways to use technology in their classrooms.
4	Reorientation	Teachers begin to rethink the educational goals of the classroom with the use of technology.
5	Revolution	The evolving classroom becomes completely integrated with technology in all subject areas. Technology becomes an invisible tool that is seamlessly woven into the teaching and learning process.

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Note: Source!

Anxious technology-challenged educators may fixate on issues related to hardware and software but technology proficiency is not about a body of knowledge as much as having a working understanding that translates into the day-to-day learning environment that one creates in ones classroom. *As the model points out*

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Comment: Also see rules for citing sources for tables.

The Usual Suspects *for Hindering . . . ???*

Time & Professional Development: The Shulzman Study

Using three New Hampshire superintendents as his survey sample, Shulzman *in 2004* looked at the problem of technology integration from the perspective of how a district superintendent's belief in the role of technology in the classroom would influence the rollout of technology in their districts. Shulzman noted that one of the first concerns consistently expressed was about the time needed for professional development. The two chief concerns, given everyone's crowded schedules, *was* where one *could* find the time for professional development and then secondly, whether this *was* going to come out of contractual time (Shulzman, 2004, p. 325).

Shulzman's work . . . Understandably there is no one solution to this problem. One superintendent created three full days of professional development. Another looked at putting a technology coordinator/teacher at the elementary level to co-teach with the classroom teacher in the school's lab so that the teachers would benefit from being exposed to and see what can be done with the technology (pp.333-334). Shulzman suggests, "on the most basic level, if districts expect teachers and students to adopt technology as a core instructional tool, then clearly access to availability of instructional technology resources is not a condition, but a precondition" (p.

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Comment: You haven't connected it . . . make your point . . . you said it was a "best practice" . . . then explain

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Comment: notice you go from one heading to the next without any text separating them . . . do you need both headings? How could you aid the reader by telling us what you plan to discuss in the following several sections. Time and Professional Development is one . . . what else is to come?

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Comment: Edit this . . . you are talking about a study already done . . . though if you are wanting to quote . . . then so indicate which words are quoted!

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325). There's apparently no universal answer to the need for time, but it is clearly not something that anyone can assume just happens. In Shulzman's study the three superintendents took steps to address the problem.

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Comment: Ok . . . note the correct style you used for this quote.

Funding & Access

In a section entitled "External Conditions that Impede Integration" Shulzman wrote that each superintendent learned that there was a clear expectation from the public that technology money should be spent getting the technology into the hands of students before spending money on training teachers on the technologies use. That is, it's always been easier to get money to fund labs and get technology teachers versus funding to build teacher technology capacity (Shulzman, 2004, p.336).

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Comment: I see the same study discussed . . . are you going beyond Shulzman's work . . . rethink how you organize these paragraphs and sections.

Conversely in a 2003 study titled "No access, no use, no impact" the study's authors wrote that the public perception might be that the United States is spending billions putting technology into our classrooms but the deployment is such that few students or teachers have meaningful access to it. Of the 3,600 teachers who responded to the author's survey one teacher out of six had no computer in his or her classroom and about two-thirds had only one computer to share with the whole classroom. Less than 5% of the teachers reported having more than five computers in their classrooms (Norris, 2003, para. 14). Thus 14% of the K-12 teachers wrote that they make no instructional use of the computers at all, while 45% use it with their students for less than 15 minutes per week, or just three minutes per day. At the other end of the usage spectrum just 18% reported using computers for instructional purposes for more than 45 minutes a week (para. 11). As far as Internet access and usage, one-third of the respondents reported access to the Internet via computer lab computers at least twice a week. Alas 28% had computer

lab access only once a week and 39% had either no lab access or only sporadic access to a computer lab (para. 16). The study's authors conclude "teachers cannot employ educational technology to which they have minimal or no access, let alone integrate that technology seamlessly into curricular activities" (para. 17)

Leadership

Shulzman's superintendents believed that three levels of leadership were necessary for local schools to successfully integrate technology into their curriculum. Besides their own involvement, they noted the need for the support and involvement at the principal/administrative level and technology leadership at the district and site level (Shulzman, 2004, p. 330). In a corresponding study on the relationship between principals' own technology familiarity and their site's progress at integrating technology the authors found that "the leadership in a school largely determines the outcome of technology integration; however, administrators cannot fully or effectively support technology if they do not understand it" (Dawson, 2003, para. 20). Clearly anxiety about one's technological expertise should not be limited to classroom teachers.

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Comment: Hmm . . . again, a single study for this heading . . . perhaps the headings are incorrect.

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Comment: This whole section is focusing on one study . . . then you use others to support . . . go back to the beginning of your paper (or at least this section) to clarify purpose.

Concluding Observations

Due to the brevity of this paper the hindrances encountered on the way to efficient utilization of technology in education could only be briefly touched on. Nonetheless, I am drawn to make three observations. The first is that the problem is much larger than a matter of teachers not knowing enough about computers. Just thinking about the problem in terms of teachers needing to learn more about PowerPoint or some application points to a wrong view of learning technology as a disconnected area of study. For educators, or anyone whose industry is being revolutionized by these machines, the connection between knowledge and usage are the twin engines that move one further along the continuum of experience and real learning happens

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when the two are kept in balance.

A second observation is expressed ~~through~~ Wellivers Instructional Transformation Model.

Specifically that the path from novice to really using technology is a journey over time that requires the user to see the purpose and engage in a process of change that may take many unsuccessful as well as successful steps. This is not something that an educator or administrator can accomplish over the course of a single Saturday spent taking a class on Access or Dreamweaver.

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Comment: modify . . . take out the first person style . . . you are writing a scholarly analysis . . . you can include your opinion . . . though we know it is you . . . you are the author of the paper . . . You don't need to say "I"

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The third observation is that we are talking about a process of change and the process can only be as successful as those willing to see the process through. Shulzman quotes an earlier study that looked at themes or conditions that were present in environments where implementation of technology was successful. The conditions were: availability of resources, dissatisfaction with the status quo, existence of knowledge and skills, availability of time, rewards and incentives, participation, commitment, and leadership (Shulzman, 2004, p. 325). The second condition was the one that stood out to me. Thus, all it takes is one person in the chain of command, one person with a say in the process who does not want change in order for there to be a speed bump on the way to efficient utilization of technology in education.

Comment: Rewrite your closing . . . it could be much stronger . . .

References

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